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EXAMINER	
SURVILLO, OLEG	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,102	JUNG ET AL.	
	Examiner	Art Unit	
	OLEG SURVILLO	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/17/09; 08/28/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1-42 remain pending in the application. Claims 1, 5, 7-10, 13-18, and 21-25 are currently amended. No claims have been canceled. Claims 30-42 are new.

Response to Arguments

2. With regard to the applicant's remarks dated July 20, 2009:

regarding the rejection of claims 5 and 13-24 under 35 U.S.C. 112, second first paragraph, applicant's amendment has been fully considered but is insufficient to overcome the rejection. Therefore, the rejection is maintained.

In response to applicant's argument that *"examiner did not address applicant's response to this rejection with respect to claim 5"*, it is noted that applicants did not and could not have provided any argument with respect to the rejection of claim 5 under 35 U.S.C. 112, first paragraph in their previous response for examiner to address because this rejection was only made in the last Office action. Therefore, applicant's response dated July 20, 2009 is the first response addressing said rejection.

Regarding the rejection of claims 7-9 under 35 U.S.C 112, second paragraph, applicant's amendment has been fully considered and is sufficient. Therefore, the rejection has been withdrawn.

Regarding the rejection of claims 1-38 under 35 U.S.C. 103(a), applicants' arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained.

It is noted that any arguments earlier presented were already fully addressed by the examiner in the last Office action. Since applicants failed to address examiner's remarks made in the last Office action, response to same arguments is not repeated here for brevity.

At point 1), applicants argue that *"Examiner has inadvertently ignored several express recitations of independent claim 1 and therefore has not met his burden to establish a prima facie case of unpatentability for independent claim 1"*.

In response to applicant's argument at point 1), it is noted that every element of claim 1 has been showm to be taught by Mulgund and Madden references, as fully addressed in the reasons for rejection. Applicants are requested to provide statutes, regulations, or sections of the MPEP that would require examiner to provide any further explanation of how examiner reaches the mapping under the broadest reasonable interpretation framework beyond what has been already explained to applicants in the reasons for rejection.

At point 2), applicants argue that *"Examiner is characterizing Mulgund and/or Madden to "teach" the text of independent claim 1, but does not support his characterization"*.

In response to applicant's argument at point 2), it is noted that this argument appears to be a general allegation unsupported by any underpinning rationale. In support of their argument applicants only copy-paste portions of the last Office action and applied references without providing any corroborative evidence supporting their conclusory statements. As was discussed many time before, the quoted material from

Mulgund et al. and/or Madden et al. is not required to repeat the claim language word for word, as claimed limitations are a subject to interpretation, such interpretation being as broad as the claim terms would reasonably allow, in light of the specification, when read by one skilled in the art with which the claimed invention is most closely connected.

At point 3), applicant argues that *"the Examiner-suggested modifications of the teachings of Mulgund and Madden to meet the recitations of claim 1 change the principle of operation of prior art components being modified, and/or render the prior art components unfit for their intended purpose"*.

In response to argument at point 3), Examiner disagrees. Teachings of Madden improve on the server-based approach of Mulgund by having aggregations computed in-network in order to reduce the number of message transmissions, latency, and power consumption comparing to the server-based approach. However, teachings of Madden do not alter the principle of operation of Mulgund since the aggregation of sensor readings is still performed as the end result and the Network Modeling Agent of Mulgund is still utilized in order to log the sensor readings in the central database at the server device. Therefore, even if modified with teachings of Madden, Mulgund is still fit for its intended purpose, that is aggregating the state of an ad hoc network into a relational database (abstract of Mulgund). Thus, applicant's argument cannot be held as persuasive.

As to any arguments not specifically addressed, they are the same as those discussed above or earlier presented in the previous response. Therefore, these arguments are not persuasive for analogous reasons.

Information Disclosure Statement

3. The information disclosure statement dated June 17, 2009 fails to comply with the provisions of 37 CFR 1.98 and MPEP § 609 because documents listed under section U.S. Patent Application Documents are not identified by a U.S. Patent Application Publication Number, as required by column heading. As a result, these documents have not been considered.

Specification

4. The application contains disclosure entirely outside the bounds of the claims. Applicant is required to modify the brief summary of the invention and restrict the descriptive matter so as to be in harmony with the claims (MPEP § 1302.01).
In particular, it appears that only disclosure of section IV. TRANSMISSION OF AGGREGATED MOTE-ASSOCIATED INDEX DATA (pages 18-25 of the specification) is relevant to the subject matter of claims 1-42, as presently claimed. The rest of the specification describes the subject matter of the co-pending applications wherein the name of each section in the specification corresponds to the name of each of the co-pending applications. Applicants are reminded that the subject matter of the earlier and later sections of the specification (sections I, II, III, and V.) is actually included through

their incorporation by reference of the related/parent applications, as mentioned in the beginning of the specification (pages 1-4). As a result, providing a detailed description of the subject matter of co-pending applications is redundant and must be removed from the current application.

This objection was requested by applicants to be held in abeyance until allowable subject matter is indicated, pursuant to 37 CFR 1.111(b), in response dated November 26, 2008.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 5, 13-25, 30, 33, and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, as the time the application was filed, had possession of the claimed invention.

As to claim 5, the claim recites *"the mote-addressed content indexes of the first set of motes comprises addresses of content stored in a memory in the first set of motes"*. Applicants failed to identify a specific portion of the specification, such as by page and line number, where the proper antecedent basis for the claimed subject matter can be found. Examiner has reviewed the specification and is unable to locate a

recitation of or a proper support for indexes comprising addresses of content stored in memory.

As to claim 13, the claim has been amended to recite "an entity controlled by a second mote". Applicants failed to identify a specific portion of the specification, such as by page and line number, where the proper antecedent basis for the claimed subject matter can be found. Examiner has reviewed the specification and is unable to locate a recitation of an entity controlled by a second mote to transmit content index.

Claims 14-24 recite additional means and a reporting entity as a part of the entity of claim 13. Examiner has reviewed the specification and is unable to locate the claimed structure of the entity comprising recited means and a reporting entity.

As to claim 25, the claim recites *"the transmitted aggregate of one or more mote-addressed content indexes of the first set of motes excluding mote-addressed content indexes of the second mote"*. Applicants failed to identify a specific portion of the specification, such as by page and line number, where the proper antecedent basis for the claimed subject matter can be found. Examiner has reviewed the specification and is unable to locate a recitation of or a proper support for indexes comprising addresses of content stored in memory.

Claims 30, 33, and 36 are rejected for analogous reasons as those discussed just above with respect to claim 25.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 39-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 39-42, it is unclear as what is being meant by “a query command format”, “control command format”, and “a feedback format”, such that the Examiner is unable to correctly interpret these limitations and properly apply prior art references. Review of the specification provided no recitation of these limitations and what they are deemed to be. The only support for these limitations is in the drawings. However, drawings do not provide sufficient disclose to determine what constitutes “a query command format”, “control command format”, and "a feedback format”.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 3-10, 13, 15-22, 31, 32, 34, 35, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. (US 2002/0161751 A1) in view of “TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks” by Samuel Madden et al.

As to claim 1, Mulgund shows:

transmitting at least a part of one or more mote-addressed content indexes of a first set of motes [retrieving the information stored at the node] (par. [0025] and [0062]), wherein the first set of motes excludes the second mote [set of parent nodes 2 excludes a child node 2] (Fig. 1). It is noted that the terms "node" and "mote" are interpreted to have the same meaning of small embedded platform that has one or more sensors (par. [0026]) and therefore these terms are used here interchangeably.

Mulgund does not explicitly show that transmitting is with a second mote and that at least a part of an aggregate of one or more mote-addressed content indexes is transmitted (emphasis added).

Madden shows transmitting with a second mote [child node] at least a part of an aggregate of one or more mote-addressed content indexes [sensor attributes, such as group id] of a first set of motes [a collection phase, where the aggregate value are continually routed up from children to parents], wherein in the first set of motes excludes the second mote [set of parent nodes excludes a child node] (abstract, section 1.1 par. 2, section 4, 4.1 pars. 1-2, and 4.2; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by transmitting with a second mote at least a part of an aggregate of one of more mote-addressed content indexes in order to lower the number of message transmissions, latency, and power consumption than the server-based approach (as taught by Mulgund) (Madden, section 4 under In-Network Aggregates).

As to claim 3, Mulgund in view of Madden shows transmitting at least a part of a mote-addressed routing/spatial index (section 2.1, paragraphs 2 and 3, Madden).

As to claim 4, Mulgund in view of Madden shows transmitting part of the aggregate of one or more mote-addressed content indexes of the first set of motes to a reporting entity [TinyOS, the mote operating system of the parent node receiving the transmitted aggregate] (section 1 Introduction, paragraph 1, Madden).

As to claim 5, Mulgund shows that the mote-addressed content indexes of the first set of motes comprises addresses of content [attributes of the sensor data] stored in a memory in the first set of motes [knowledge base] (par. [0026] in Mulgund).

Mulgund does not show transmitting with a second mote comprises obtaining access to the one or more mote-addressed content indexes of the first set of motes.

Madden shows transmitting with a second mote comprises obtaining access to the one or more mote-addressed content indexes of the first set of motes [parent node obtaining a message from a child node, message containing one or more mote-addressed content indexes] (section 2.1, last paragraph, Madden)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by transmitting with a second mote comprises obtaining access to the one or more mote-addressed content indexes of the first set of motes in order to lower the number of message transmissions, latency, and

power consumption than the server-based approach (as taught by Mulgund) (Madden, section 4 under In-Network Aggregates).

As to claim 6, Mulgund in view of Madden shows transmitting part of the aggregate of one or more mote-addressed content indexes of the first set of motes in response to a schedule (Madden, section 4.1, paragraphs 2 and 3).

As to claim 7, Mulgund in view of Madden shows receiving the schedule (Madden, section 4.1, paragraphs 2 and 3).

As to claim 8, Mulgund in view of Madden shows deriving the schedule (Madden, section 4.1, paragraphs 2 and 3).

As to claim 9, Mulgund in view of Madden shows deriving the schedule at least in part from at least one of multiple optimized queries or multiple stored queries (Madden, section 4.1, paragraphs 2 and 3, wherein there are multiple queries posed, section 1.1 par. 2).

As to claim 10, Mulgund in view of Madden shows transmitting part of the aggregate of one or more mote-addressed content indexes of the first set of motes in response to multiple queries (Madden, abstract, section 1.1 the TAG Approach).

As to claim 13, Mulgund shows:

transmitting at least a part of one or more mote-addressed content indexes of a first set of motes [retrieving the information stored at the node] (par. [0025] and [0062]), wherein in the first set of motes excludes the second mote [set of parent nodes 2 excludes a child node 2] (Fig. 1). It is noted that the terms "node" and "mote" are interpreted to have the same meaning of small embedded platform that has one or more sensors (par. [0026]) and therefore these terms are used here interchangeably.

Mulgund does not explicitly show an entity controlled by a second mote and that at least a part of an aggregate of one or more mote-addressed content indexes is transmitted (emphasis added).

Madden shows an entity controlled by a second mote [child node's RFM radio device] to transmit at least a part of an aggregate of one or more mote-addressed content indexes [sensor attributes, such as group id] of a first set of motes [a collection phase, where the aggregate value are continually routed up from children to parents], wherein in the first set of motes excludes the second mote [set of parent nodes excludes a child node] (abstract, section 1.1 par. 2, section 4, 4.1 pars. 1-2, and 4.2; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having an entity controlled by a second mote to transmit at least a part of an aggregate of one of more mote-addressed content indexes in order to lower the number of message transmissions, latency, and power

consumption than the server-based approach (as taught by Mulgund) (Madden, section 4 under In-Network Aggregates).

As to claims 15-22, Mulgund in view of Madden shows all the elements, as discussed above with respect to corresponding method claims 3-10.

As to claim 31, Mulgund shows that the mote-addressed sensing index or the mote-addressed control index indicates an output format of information from the queried device [each of Node Data Table is defined to accommodate the type of sensor data known to originate from that node] (par. [0042] in Mulgund).

As to claims 34 and 37, these claims are rejection under same rationale as claim 31, above.

As to claim 32, Mulgund shows that the mote-addressed content index of the first set of motes indicates the availability of a light device, an electrical device entity, a pressure device entity, a temperature device entity, a volume device entity, an inertial device entity, or an antenna entity [each of Node Data Table is defined to accommodate the type of sensor data known to originate from that node] (par. [0042] in Mulgund).

As to claims 35 and 38, these claims are rejection under same rationale as claim 32, above.

11. Claims 2, 14, and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks" by Samuel Madden et al (hereinafter *Madden Ref.1*) and in further view of "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al. (hereinafter *Madden Ref. 2*).

As to claim 2, Mulgund in view of Madden Ref. 1 shows all the elements except for sensing index being transmitted [sensors route data back towards the user through a routing tree rooted at the basestation] (section 1.1 paragraph 2, Madden Ref. 1).

Madden Ref. 2 shows at least one of a mote-addressed sensing index [a sensor table of sensors' readings and types of sensors] (section 3.1 Basic Language Features).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund in view of Madden Ref. 1 by transmitting at least a part of at least one of a mote-addressed sensing index in order to report sensor id, light, and temperature readings such that these readings make sense in a context of name-value pair (section 3.1 Basic Language Features, Madden Ref. 2) and (section 2 last paragraph, Madden Ref. 1).

As to claim 14, Mulgund in view of Madden Ref. 1 and in further view of Madden Ref. 2 shows all the elements, as discussed per claim 2.

As to claims 39 and 40, Mulgund teaches transmitting an output format of information of the sensing device [each of Node Data Table is defined to accommodate the type of sensor data known to originate from that node] (par. [0042] in Mulgund).

Madden shows that each sensor has a copy of TinyOS installed (Madden TAG section 1). Therefore, a query command format is inherently transmitted with every query and response since the devices operate using the same OS and query model (Madden TAG, section 3.1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by transmitting a query command format of a sensing device in order to allow the device posing the query to send the query that the sensing device would understand and be able to respond to (Madden TAG, section 3.1).

As to claims 41 and 42, Mulgund teaches transmitting a feedback format of information of the sensing device [each of Node Data Table is defined to accommodate the type of sensor data known to originate from that node] (par. [0042] in Mulgund).

Madden shows that each sensor has a copy of TinyOS installed (Madden TAG section 1). Therefore, a control command format is inherently transmitted with every query and response since the devices operate using the same OS and query model (Madden TAG, section 3.1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by transmitting a control command format of

a sensing device in order to allow the device posing the query to send the query that the sensing device would understand and be able to respond to (Madden TAG, section 3.1).

12. Claims 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks" by Samuel Madden et al. and in further view of Regli et al. (US 2005/0141706 A1).

As to claim 11, Mulgund in view of Madden shows all the elements except for encrypting part of the aggregate of one or more mote-addressed content indexes of the first set of motes utilizing at least one of a private or a public key.

Regli shows encrypting part of the aggregate of one or more mote-addressed content indexes of the first set of motes utilizing at least one of a private or a public key (par. [0056]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund in view of Madden by encrypting part of the aggregate of one or more mote-addressed content indexes of the first set of motes utilizing at least one of a private or a public key in order to support encrypted communication at the network layer between wireless devices (paragraphs [0054]-[0056] in Regli).

As to claim 12, Mulgund in view of Madden shows all the elements except for decoding at least a part of one or more mote-addressed content indexes utilizing at least one of a public key or a private key.

Regli shows decoding traffic on the network layer [decryption of traffic] utilizing at least one of a public key or a private key (paragraph [0064]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund in view of Madden by having at least a part of one or more mote-addressed content indexes (as taught by Mulgund in view of Madden) being decoded utilizing at least one of a public key or a private key (as taught by Regli) in order to support encrypted communication at the network layer between wireless devices (paragraphs [0054]-[0056] and [0064] in Regli).

As to claims 23 and 24, Mulgund in view of Madden and in further view of Regli shows all the elements, as discussed per claim 11 and claim 12 above.

13. Claims 25, 26, 28-30, 33, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks" by Samuel Madden et al and in further view of "A Transmission Control Scheme for Media Access in Sensor Networks" by Alec Woo et al.

As to claim 25, Mulgund shows a second mote (Fig. 1 node (2)).

Mulgund does not explicitly show means for transmitting at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, the

transmitted aggregate of one or more mote-addressed content indexes of the first set of motes excluding mote-addressed content indexes of the second mote, and said means for transmitting being disposed proximate to said second mote.

Madden shows means for transmitting at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, and said means for transmitting being disposed proximate to said mote [a TinyOS that facilitates routing data from child device to a parent device] (section 1 Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Mulgund by having means for transmitting at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, and said means for transmitting being disposed proximate to said mote in order to facilitate routing data between devices (Madden, section 1).

Mulgund in view of Madden does not show that the transmitted aggregate of one or more mote-addressed content indexes of the first set of motes excludes mote-addressed content indexes of the second mote.

Woo shows a complete TinyOS application component graph wherein the sensor component periodically transmits the data toward a base station over the multihop network (section 2.1 Networking Component Stack). In particular, Woo shows that the transmitted data of the first set of motes excludes data of the second mote [multihop component receives a packet and retransmits it to the upstream level] (section 2.1 Networking Component Stack, par. 2).

It would have been obvious to one of ordinary skill in the art at the time of the rejection to modify the system of Mulgund in view of Madden by having the transmitted aggregate of one or more mote-addressed content indexes of the first set of motes exclude mote-addressed content indexes of the second mote in order to perform pure retransmission of received packets along the network without performing additional functionality of aggregating, such pure retransmission conserving power from being used for data aggregation in each mote.

As to claim 26, Mulgund shows at least one mote (Fig. 1 node (2)).

Mulgund does not explicitly show at least one multi-mote reporting entity resident in said at least one mote, said at least one multi-mote reporting entity configured to report at least a part of a multi-mote content index stored in motes other than the at least one mote.

Madden shows at least one multi-mote reporting entity resident in said at least one mote, said at least one multi-mote reporting entity configured to report at least a part of a multi-mote content index stored in motes other than the at least one mote [a TinyOS that facilitates routing data from child device to a parent device] (section 1 Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Mulgund by having at least one multi-mote reporting entity resident in said at least one mote, said at least one multi-mote reporting entity configured to report at least a part of a multi-mote content index stored in motes other

than the at least one mote in order to facilitate routing data between devices (Madden, section 1).

In support to the teaching of Madden, Woo shows a complete TinyOS application component graph wherein the sensor component periodically transmits the data toward a base station over the multihop network (section 2.1 Networking Component Stack).

As to claim 28, Mulgund in view of Madden Ref. 1 shows said at least one multi-mote reporting entity [TinyOS] being configured to transmit at least one of a sensing function, a control function, or a routing/spatial information [TinyOS uses a CSMA-like media access protocol to send and receive messages] (section 1 Introduction; section 2 par. 3 in Madden Ref. 1).

As to claim 29, Mulgund shows at least one of a processor, a memory, or a communications devices formed from a substrate (par. [0026]).

As to claim 30, Mulgund in view of Madden does not show that the transmitted aggregate of one or more mote-addressed content indexes of the first set of motes excludes mote-addressed content indexes of the second mote.

Woo shows a complete TinyOS application component graph wherein the sensor component periodically transmits the data toward a base station over the multihop network (section 2.1 Networking Component Stack). In particular, Woo shows that the transmitted data of the first set of motes excludes data of the second mote [multihop

component receives a packet and retransmits it to the upstream level] (section 2.1 Networking Component Stack, par. 2).

It would have been obvious to one of ordinary skill in the art at the time of the rejection to modify the system of Mulgund in view of Madden by having the transmitted aggregate of one or more mote-addressed content indexes of the first set of motes exclude mote-addressed content indexes of the second mote in order to perform pure retransmission of received packets along the network without performing additional functionality of aggregating, such pure retransmission conserving power from being used for data aggregation in each mote.

Claim 33 is rejected under the same rationale as claim 30, above.

As to claim 36, Mulgund in view of Madden does not show that the at least one multi-mote reporting entity is configured to report at least a part of a multi-mote content index stored in motes without reporting a content index stored in the at least one mote.

Woo shows a complete TinyOS application component graph wherein the sensor component periodically transmits the data toward a base station over the multihop network (section 2.1 Networking Component Stack). In particular, Woo shows that the at least one multi-mote reporting entity is configured to report data stored in motes without reporting data stored in the at least one mote [multihop component receives a packet and retransmits it to the upstream level] (section 2.1 Networking Component Stack, par. 2).

It would have been obvious to one of ordinary skill in the art at the time of the rejection to modify the system of Mulgund in view of Madden by having the at least one multi-mote reporting entity being configured to report at least a part of a multi-mote content index stored in motes without reporting a content index stored in the at least one mote in order to perform pure retransmission of received packets along the network without performing additional functionality of aggregating, such pure retransmission conserving power from being used for data aggregation in each mote.

14. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks" by Samuel Madden et al. (hereinafter Madden Ref. 1) in view of "A Transmission Control Scheme for Media Access in Sensor Networks" by Alec Woo et al. and in further view of "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al. (hereinafter Madden Ref. 2).

As to claim 27, Mulgund shows that said multi-mote content index comprises at least one of a sensing function, a control function, or a routing/spatial information of a mote-appropriate device (paragraphs [0037], [0041] in Mulgund).

Alternatively, Madden Ref. 2 shows that said multi-mote content index comprises at least one of a sensing function, a control function, or a routing/spatial information of a mote-appropriate device (under 2.2 Communication in Sensor Networks, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Mulgund in view of Madden Ref. 1 and further view of

Woo by having said multi-mote content index comprise at least one of a sensing function, a control function, or a routing/spatial information of a mote-appropriate device in order to provide mote specific information.

Conclusion

15. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo

Phone: 571-272-9691

/saleh najjar/
Supervisory Patent Examiner, Art Unit 2455